

Applicant: Ralph Wirth, et an Serial No.: 10/089,017 Filed: March 25, 2002

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Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

- 1. (Previously presented) A light-emitting diode, comprising
 - a semiconductor layer structure including a substrate and at least one lightgenerating layer formed on said substrate and one transparent current-spreading layer deposited on said light-generating layer,
 - a first electrical contact layer on the back of said substrate, and
 - a second electrical contact layer disposed on said current-spreading layer, characterized in that
 - the top surface of said current-spreading layer has vertical structuring to improve the decoupling of light, and
 - -said second electrical contact layer has a lateral structure by means of which substantially uniform coupling of the electrical current into said current-spreading layer can be achieved.
- 2. (Currently amended) The light-emitting diode as described in claim 1, characterized in that
 - said second electrical contact layer is a central, in particular circular or square contact surface and, arranged about said central contact surface, a contact structure that is rotationally symmetrical with respect to the center point of said central contact surface and is composed of relatively narrow contact webs and/or contact points.
- (Currently amended) The light-emitting diode as described in claim 2, characterized in that





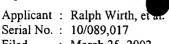
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- the rotational symmetry is a symmetry represented by a whole number-and in particular matches the rotational symmetry of the light-emitting diode.

- 4. (Previously presented) The light-emitting diode as described in claim 1, characterized in that said second electrical contact layer is realized as continuous.
- 5. (Previously presented) The light-emitting diode as described in claim 1, characterized in that
 - said second electrical contact layer is discontinuous and is interconnected by a layer of transparent, light-conducting material.
- 6. (Previously presented) The light-emitting diode as described in claim 1, characterized in that said second electrical contact layer is arranged on structured and/or unstructured portions of said current-spreading layer.
- 7. (Currently amended) The light-emitting diode as described in claim 1, characterized in that
 - the vertical structuring is in the form of preferably-regularly-arranged n-sided $(n \ge 3)$ pyramids, frusta of pyramids, cones or frusta of cones.
- 8. (Previously presented) A method for fabricating a light-emitting diode as described in claim 1, characterized in that
 - a light-generating layer and thereafter a relatively thick and transparent currentspreading layer are deposited on a substrate and the back of said substrate is provided with a first electrical contact layer,
 - vertical structuring to improve the decoupling of light is produced in the surface of said current-spreading layer,





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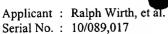
> - a second electrical contact layer having the desired lateral structure is deposited on the structured top surface of said current-spreading layer.

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- 9. (Previously presented) The method for fabricating a light-emitting diode as described in claim 1, characterized in that
 - a light-generating layer and thereafter a relatively thick and transparent currentspreading layer are deposited on a substrate and the back of said substrate is provided with a first electrical contact layer,
 - a second electrical contact layer having the desired lateral structure is deposited on the top surface of said current-spreading layer, and
 - vertical structuring to improve the decoupling of light is produced in the top surface of said current-spreading layer outside the areas of said second electrical contact layer.
- 10. (New) The light emitting diode of claim 2 wherein said central contact surface is a circular contact surface.
- 11. (New) The light emitting diode of claim 2 wherein said central contact surface is a square contact surface.
- 12. (New) The light emitting diode of claim 3 wherein said rotational symmetry matches the rotational symmetry of the light-emitting diode.
- 13. (New) The light emitting diode of claim 7 wherein said n-sided (n > 3) pyramids, frusta of pyramids, cones or frusta of cones are regularly arranged.
- 14. (New) A light-emitting diode, comprising





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- a semiconductor layer structure including a substrate and at least one lightgenerating layer formed on said substrate and one transparent current-spreading layer deposited on said light-generating layer,

- a first electrical contact layer on the back of said substrate, and
- a second electrical contact layer disposed on said current-spreading layer, characterized in that
- the top surface of said current-spreading layer has vertical structuring to improve the decoupling of light, and
- -said second electrical contact layer has a lateral structure by means of which substantially uniform coupling of the electrical current into said current-spreading layer can be achieved,

wherein said second electrical contact layer has a lateral structure with a circumferential contact web arranged about a central contact structure.

